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Described is a project to obtain and disseminate research which resulted in the compilation of 61 abstracts of master's theses in environmental education and communication. Environmental educators were surveyed to determine their use of various informational tools available to them and the usefulness of the compilation of abstracts. Authors of master's theses in environmental education were questioned to find formal and informal patterns of distribution of their studies. (BT)

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IMPROVING ACCESS TO MASTER'S THESES IN ENVIRONMENTAL EDUCATION

by

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A thesis submitted in partial fulfillment of the
Master of Science Degree

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ABSTRACT

The field of environmental education and communications has developed an extensive research literature despite being a comparatively young field. Master's theses in the field have proven difficult to obtain, and this gap in access could hamper effective research and sound educational planning.

This thesis describes a project to obtain and disseminate master's level material which resulted in the compilation of 61 abstracts of master's theses in environmental education and communications. These were published in April 1978 under the title Recent Master's Thesis Work in Environmental Education and Communications.

Environmental educators were surveyed to uncover their use of various informational tools available to them, and the usefulness of the compilation of abstracts. In addition, authors of master's theses in environmental education were queried to find formal and informal patterns of distribution of their studies.

CHAPTER I

Introduction

In 1977 a project was begun at the State University of New York College of Environmental Science and Forestry to improve access to research in environmental education and communications. This thesis describes the first phase of this project. The primary result of the first phase was the compilation of 61 abstracts of master's theses which was published in April 1978 under the title Recent Master's Thesis Work in Environmental Education and Communications. (Appendix VI contains a copy of this publication.) As part of the project, perceived access to and utilization of research materials among environmental educators was surveyed. In addition, the authors of the theses abstracted were surveyed to try to find informal patterns of distribution of master's theses.

For a term which apparently was used for the first time in 1964 (Schoenfeld & Disinger, 1977), "environmental education" has received extraordinary use in the educational world. There is a Federal law devoted to it (PL 91-516, The Environmental Education Act), a Journal of Environmental Education, a federal Office of Environmental Education,

numerous State and local associations, at least 51 doctoral dissertations with the phrase "environmental education" in their titles published in the last six years, and literally dozens of published definitions of what environmental education is or should be. (For a sample of these -- by no means exhaustive -- see Schoenfeld, 1970; Hungerford, 1975; Swan, 1975; Miller, 1971; Stapp, et. al. 1969; Roth, 1969; Martin, 1970; Wigston, 1977.)

Even more impressive than the amount of academic interest engendered by environmental education have been the claims made for its importance in the educational process and for its implications for society as a whole. This is certainly not the place to recapitulate the historical developments which led to the formation of the environmental education concept, nor to elaborate on the significance of environmental issues in the modern world. The following quote from then-President Richard Nixon's first annual message to Congress to convey the findings of the Council on Environmental Quality shows how thoroughly the rhetoric of environmental educators had reached the highest levels of government:

> "It is vital that our entire society develop a new understanding and a new awareness of man's relation to his environment that might be called 'environmental

> literacy'. This will require the development and teaching of environmental concepts at every point in the educational process." (1970)

The relatively recent emergence of environmental education and communications as a field and the multiplicity of definitions alluded to earlier had definite effects on the project to collect and disseminate environmental education research materials. In order to decide what sort of materials would be sought, it was necessary to define the parameters of environmental education. In order to do this one naturally turns to the published definitions of environmental education, but here the authorities in the field admit that there is considerable disparity. One environmental educator (Wheeler, 1975) writes that:

> "...the terms 'Environment' and 'Education' are difficult to define for there are as many opinions about their meaning as there are people to express themselves on these subjects."

Or as Jones (1978) says more emphatically: "The most widely accepted definition of environmental education would be '...environmental education is what I say it is.'"

Yet the defining of environmental education has been of tremendous importance to those in the field. Some of the reasons have been cynically expressed:

> "Most of the difficulties arise in the administration of various types of programs by organizations and

> agencies. Many involved in these activities tend to separate and fragment disciplines in order to obtain identification and status." (Smith, et. al., 1972)

There has been a persistent effort by environmental educators to differentiate themselves from the older field of conservation education on the one hand (see, for example, Schoenfeld, 1972 and Swan, 1975); and from outdoor education on the other (see Miller, 1971). These efforts have drawn complaints from the outdoor educators (Donaldson, 1975) who simply do not wish to be drawn into the battle.

The problem of defining environmental education is two-fold: first, there are competing educational labels that cover much the same territory, and second, there is such divergence in the definitions that have been put forth. One author (Wigston, 1977) goes so far as to say that the lack of a shared definition or "paradigm" is the central factor retarding the acceptance of environmental education:

"It is a property of a shared 'paradigm' that characterizes traditional 'respectable' scientific disciplines."

Some measure of order has been imposed by recent analyses. Johnson (1977) found that there was considerable agreement among environmental educators, and between environmental educators and conservation educators, of the relative importance of various possible goals. Thus, while

there might be disparity in definitions, and while both environmental educators and conservation educators may be making conscious attempts to differentiate their fields, the goals that they express are similar.

Schoenfeld and Disinger (1978b), have listed four aspects of environmental education: it is life-long, it is multidisciplinary, it uses many media; and it is oriented towards current problems. Their analysis brings out the fact that much environmental education takes place outside of traditional educational institutions, and that environmental communications - the use of media as an educational tool about the environment - is closely allied to environmental education. Henceforth in this thesis the term "environmental education" should be understood to include "environmental communications" as well.

If there has been one recurrent theme in the effort to define environmental education and to differentiate it from competing terms, it has been the theme of content versus process. This is an age-old theme in educational philosophy as a whole. In the case of environmental education it can be said that the preponderance of definitions are strongly process-oriented, (see for example Swan, 1975; Tanner, 1974; and Martin, 1970). Process-oriented

approaches have taken hold in practical applications as well -- for instance, in the U.S. Forest Service.

This emphasis on process as opposed to content has very important implications for the role of environmental education in the educational system, and the relationship of it to existing educational structures. Environmental educators tend to argue that it should pervade the entire curriculum rather than be taught as a single subject (Marland, 1971): that it be included within mathematics, social studies, biology, and so on. Numerous materials have been prepared for teachers and curriculum planners describing how this can and should be done for the K-12 levels.

A similar rejection of specialization and departmentalization obtains at the post-secondary level (Nash, 1975), but the diversity and independence of colleges and universities assures that there will be many structural schemes for integrating environmental education into the university organization.

Responses of institutions of higher education to the burgeoning environmental concerns of the late '60s and early '70s varied from the incorporation of environmental content into specific courses to the reorganization of entire

universities. A recent survey (Schoenfeld and Disinger, 1978a) of environmental studies courses showed that environmental education was being done under scores of departmental titles. Another survey (Vincent, 1976), of environmental education in Southeastern states concluded that seventy-four of eighty-six responding institutions had environmental education courses in 1975-76. Most of them were in biology departments, but there were over twenty other departments involved. A study of outdoor education degree programs (Bachert, 1978), which included environmental education, found that of the sixty-five institutions which qualified for inclusion, twenty-six different descriptors were used in program titles, nineteen of them only once.

In some ways this state of affairs should be cause for rejoicing. Clearly environmental education has avoided the narrow compartmentalization that its leaders decry. However, lacking a departmental home, environmental education has been an orphan in some institutions. For the purposes of this project, the most important implication of this lack of a specific departmental base for most environmental education programs is that it makes access to environmental education personnel at American colleges and universities much more difficult. It is not possible to locate the man

or woman responsible for environmental education at most universities merely by writing to the "Chair, Department of Environmental Education." The individual may be found in Forestry, Fish and Wildlife, Recreation, Biology, or a host of other programs or departmental titles. This point will be returned to in Chapter III.

As mentioned earlier, there has been a tremendous outpouring of materials related to environmental education, both in the realm of fundamental research, and in applications such as lesson plans, course guides, and other instructional materials. Following along with the production of materials has been an effort to collect, systematize, disseminate, and to criticize and evaluate these materials. As a major environmental education conference held in Snowmass, Colorado in 1975, reported:

> "Environmental education communications -- books, studies, reports, media presentations, kits, conferences, and other materials -- are increasing rapidly in both volume and variety with the result that keeping abreast of the field has become a major problem for the environmental education professional." (Schafer and Disinger, 1975.)

Some of the efforts to collect environmental education research material will be described in Chapter II, especially in the section on ERIC/SMEAC, the Educational Resources Information Center Clearinghouse on Science,

Mathematics and Environmental Education.

Research into fundamental issues has been a strongly felt need of environmental educators. Hendee (1972), complained that there were already thousands of pages of unproven, subjective, and value-laden claims in the field of environmental education, and called for a thorough review and point-by-point verification of the assumptions made by environmental educators.

These areas in which further research is needed were more systematically identified by Roth and Helgeson (1972) and Roth (1976). While the specific concerns listed in these two last-mentioned publications are too numerous to reproduce in full here, they range from the philosophical: ("the role of the school in relation to citizen environmental actions"); to instructional concerns such as the development of appropriate concept lists and their sequencing; to the use of facilities and sites: ("Definition of the role the physical environment provides in relation to visitor behavior...").

Hendee's and Roth's publications illustrate the critical importance of the collection of relevant research to the expanded self-awareness of environmental educators about the progress and shortcomings of the field, and for sound

educational planning. Without the collection and analysis of research data, it is impossible to assess future needs or to determine the empirical basis of existing environmental education. Furthermore, inadequate access to research already done can result in essentially identical studies being repeated.

Propelled along by public concern with environmental problems in the late '60's and early '70's, environmental educators made sometimes grandiose claims and demands for a sweeping overhaul of the entire school curriculum. There were solid gains, but many factors - lack of funding among them - have kept many dreams of environmental educators from coming to fruition. It appears that this is a good time for a reassessment of environmental education, to find what role it may play in the relatively muted context of the early '80's. Now that the sense of crisis over the environment has diminished, environmental educators must be able to point to a solid corpus of documented achievement to justify playing a major role in education as a whole. There certainly has been enough time since Hendee's and Roth's calls for research for scholars to have begun responding to their questions.

Environmental education research has many potential

audiences. Curriculum planners need research on concept lists and sequencing in order to develop integrated programs. Interpretive naturalists need information on the most effective techniques they can use. Classroom teachers need to know what kinds of activities have proven effective for learning environmental concepts.

Besides its role in solving such practical problems, improved access to research gives environmental educators a better overall sense of environmental education as a field. It helps them become aware of geographical, temporal, and institutional trends and emphases, and enhances the feel for community that comes with the establishment of informational networks with other environmental educators.

The primary goal of the project described by this thesis was to locate, classify, and disseminate research in environmental education and communications. This goal must be clarified and limited. It was not the goal to uncover and distribute any master's level materials that might be of interest or practical assistance to environmental educators. This would be an excessively broad task.

Almost any kind of research could be of potential use to a good environmental educator -- any research in ecology, population control, environmental management, any research

in education or communication. Instead, only those materials which specifically related to environmental education were sought. Thus, research on the evaluation of environmental education programs would be included within the scope of the project, but not research on how to evaluate educational programs in general. A study on solid waste disposal would not be included, but a study describing the effect of field trips to a sanitary landfill on students' environmental attitudes would be.

The scope of the project was also limited by the decision to focus on obtaining and distributing master's thesis level research, instead of attempting to collect research reported in other forms. This decision was made because, as Chap. II of this thesis demonstrates, access to master's theses was poor relative to other sources of environmental education and communications research.

CHAPTER II

Access to Research in Environmental Education

This chapter will describe some existing sources of environmental education research in order to show what is currently accessible and what gaps exist in the coverage. At the outset, it should be noted that the term "research" is very loosely used in this chapter and, indeed, elsewhere in the thesis. It includes descriptive materials about environmental education as well as empirical studies. However, it is not meant to include materials that are "environmental education" in their content only, such as filmstrips about pollution and so forth.

The term "environmental education" will also be very broadly used to encompass "outdoor education," "conservation education," and related labels.

This discussion of sources of research information will be limited to the printed sources. While many environmental education materials are produced as filmstrips, videotapes, films, and so forth, most of these are environmental education -- not about environmental education. Among these

print sources are books and monographs, magazine articles, newspaper articles, research reports, studies prepared on an ad hoc basis for individual programs, conference proceedings and other occasional papers unpublished or intended for oral delivery, newsletters of professional organizations, doctoral dissertations and master's theses, major graduate level papers, and undergraduate papers.

Books

Considerable work has been done in organizing bibliographies of environmental education research. The Conservation Education Association has published annotated bibliographies of books in the field, first in 1955, then in 1968, again in 1974, and with annual supplements thereafter. The title for the more recent volumes has been Environmental Conservation Education: A Selected Annotated Bibliography. This bibliography is developed by inviting publishers to submit books in the field, which are then read and annotated.

Stapp and Liston (1975) include a bibliography of books about environmental education. The Environment Index, described more fully in a later section of this chapter, provides an annual listing of new titles in environmental education. While "Environmental Education" is not a subject

heading of the Library of Congress, the Library of Congress Subject Headings refers the reader to "Conservation of Natural Resources--Study and Teaching", and "Ecology--Study and Teaching."

Periodicals

Under periodicals are included a number of different kinds of sources, among them: specialized journals in environmental education, environmental sciences, or related fields; more general scientific journals; educational journals; other journals, popular magazines with general-interest subject matter; and newspapers.

Force (1975) analyzed the magazine literature of environmental education through citations, using the Educational Resources Information Center's (ERIC) Current Index to Journals in Education 1969-1974. He found that there had been 1254 articles on environmental education published during that period in 182 different journals. The leaders were the Journal of Environmental Education with 117, Science Teacher with 79, and American Biology Teacher with 52. More than half the articles had been published in fifteen journals. The other leading journals were Science and Children, Communicator, Journal of Outdoor Education,

Science, Instructor, Science Activities, Agriculture Education Magazine, BioScience, Chemical and Engineering News, Bulletin of the Atomic Scientists, Parks and Recreation, and Science Education. While the concentration of articles in a relatively few journals certainly eases the burden on the individual trying to keep current with the environmental education literature, to follow even twelve journals to keep up with half of the output would be a tremendous burden. Fortunately there are research tools that help considerably.

The first of these is the previously mentioned Current Index to Journals in Education (CIJE). This publication provides an annotation prepared by one of the sixteen ERIC clearinghouses. Over 700 journals, mostly in education, are read by the various clearinghouses, and important articles abstracted and classified by descriptors. These descriptors come from the Thesaurus of ERIC Descriptors. To locate articles in environmental education, one would search under the descriptor "environmental education" or one of the 14 related terms provided by the Thesaurus. "Conservation education" is considered a "narrow term" for "environmental education", which is a "broad term."

Reprints of many of the articles listed in CIJE are available through University Microfilms International.

Computer searches for articles based on the use of descriptors can be ordered.

The Environment Index is a second major source of journal articles on environmental education. It is part of the Environment Information Center, (EIC), which provides document retrieval and literature searching services. Over 1000 journals are monitored for The Environment Index, which then lists titles of the more important articles. Abstracts of some of the more important articles are printed in a sister publication, Environment Abstracts, and many articles can be ordered directly from the EIC.

Classification of articles is done according to subject term keywords assigned by EIC staffers. "Education, environmental," is a subject term keyword, under which there are the subheadings Elementary, Financing, Investment, Outdoor, Primary, Public, Secondary, and University.

The coverage provided by The Environmental Index is a very useful supplement to that of the Current Index to Journals in Education since their lists of source periodicals have surprisingly little overlap. The articles listed under "Education, Environmental" and related subheadings in The Environment Index come primarily from the Journal of Environmental Education -- 62 of the 132 articles (46.9%)

in the 1975-1977 period. But there were a total of 46 periodicals used in this time period, 35 of them only once. Only five of the 48 periodicals are on the CIJE's source list, although these five accounted for 60.6% of the articles listed in The Environment Index.

The Environment Index also monitors major newspapers, such as the New York Times and Wall Street Journal.

The Institute for Scientific Information (ISI) provides a number of literature searching services that can be utilized by environmental educators as well as other academics. Their products include Current Contents (which reproduces tables of contents of selected journals), Ascatopics (which alerts subscribers to articles in their field of interest), Science Citation Index, and Social Science Citation Index. The latter two show interrelationships between articles through their citations. The ISI will provide tearsheets of articles from most of the periodicals they survey.

While not a specialized source for environmental educators, the ISI does have a thorough coverage of scientific periodicals in the natural and social sciences. Use of its alerting services or the title-based subject index can help the environmental educator find the odd articles

concerning environmental education that are published in periodicals other than the primarily educational journals covered by the CIJE or the primarily environmental journals covered by Environment Index.

"Fugitive Materials"

"Fugitive Materials" is a term used to describe a wide variety of materials that are irregularly distributed: government documents, occasional papers, unpublished studies, conference proceedings, plans for individual programs, and so forth. In the environmental education field, there is a major effort to obtain such materials, based at the Educational Resources Information Center Clearinghouse for Science, Mathematics and Environmental Education, (ERIC/SMEAC), in Columbus, Ohio. Another Clearinghouse that plays a role in environmental education is ERIC/CRESS - the Clearinghouse on Rural Education and Small Schools, which has responsibility for outdoor education. Indeed, all sixteen ERIC clearinghouses have occasional environmental education input.

The functions of ERIC/SMEAC can be broadly divided into obtaining materials, classifying and abstracting them, and dissemination. ERIC/SMEAC staff try to collect and solicit fugitive materials at conferences, through profes-

sional affiliations, and other sources, and also receive unsolicited materials. When materials are accepted for inclusion in the ERIC system, ERIC staffers annotate the material and classify it by assigning several descriptors from Thesaurus of ERIC Descriptors to it. The documents and their annotations can be located by reference to their author, titles, or through subject descriptors. The annotations are published in Resources in Education (RIE). Complete copies of most of the documents are available through ERIC and on microfiche at more than 600 locations in the United States.

The ERIC/SMEAC staffers responsible for cataloguing documents do not have explicit definitions to separate environmental education, conservation education, and so forth; however, in functional terms, there is usually considerable overlap in the categories. For instance, a manual search of Resources in Education from July 1976 to December 1977 revealed a total of 269 documents listed under the subject heading "Environmental Education," 24 under "Conservation Education," and 62 under "Outdoor Education." Fourteen of the 62 "Outdoor Education" items - 22.7% - were also listed under "Environmental Education." Thirteen of the 24 "Conservation Education" items - 54.2% - were

included under "Environmental Education." (These documents were not necessarily assigned descriptors by ERIC/SMEAC -- many of the outdoor education documents were probably classified by ERIC/CRESS.)

The main complaint against the ERIC system as a whole has been that ERIC is a bibliography, not an information source; that it merely provides raw undigested data without helping the user assess its quality (Hefferlin and Phillips, 1971). ERIC/SMEAC at least has attempted to bring some order to the field by publishing overviews of research and current teaching aids, by participating in conferences, and by the publication of reports intended to coordinate environmental education activities on a nationwide basis.

One difficulty mentioned by users of ERIC is that since "Environmental Education" itself is a descriptor, the use of the term in computer searches will tend to generate an unwieldly number of citations unless further modified.

Besides the ERIC system, another major source of "fugitive materials" is the Envirofiche service of the Environmental Information Center, which carries many documents on microfilm.

Doctoral Dissertations

Doctoral dissertations have been closely examined in

previous surveys of environmental education research. Roth and Helgeson (1972) and Roth (1976) were largely concerned with doctoral studies. Swan (1974) produced a listing of dissertations in "ecological education."

With over 450,000 titles listed in the University Microfilms International's base of doctoral dissertations, the efficiency and effectiveness of the searching tools for dissertations is a prime concern of a researcher. With this in mind, an investigation was made using a computer search to try to determine the usefulness of various keywords for locating environmental education dissertations.

University Microfilms is the primary source of doctoral dissertations in the United States. They offer a computer searching service called Datrix II, through which one can obtain the titles of all dissertations which contain two or more specified keywords. The search can be limited by time of completion or by the subject category of the dissertation (a category chosen by the author).

Appendix I shows the keywords used in the Datrix II search, which covered the years 1973-79.

A total of 173 references were found using the specified keywords. Of these, perusal of the titles (and in doubtful cases, the abstracts) revealed that 84 dissertations

were actually related to environmental education. Of these, 51 had the keyword pair "Environmental, Education" somewhere in the title, and 23 had the keyword pair "Outdoor, Education." (For the purpose of this discussion it was assumed that all "outdoor education" dissertations were also relevant to "environmental education.")

Thus, 73 out of 84 dissertations related to environmental education had the keyword pairs "Environmental, Education" or "Outdoor, Education" somewhere in the title (there was one dissertation with both), and the remaining keyword pairs, including such potentially synonymous terms as "Conservation, Education" or "Ecological, Education" produced few additional titles.

A second, related question is the extent to which relevant dissertations may contain none of the obvious keywords. In order to investigate this question, all titles under the "Education" subject heading in Dissertations Abstracts International (a publication of University Microfilms International) for an 8-month period (vol. 37, no. 1-8) were read. If the title did not immediately indicate the subject matter, the abstract was also read. Seventeen dissertations were found concerning environmental or outdoor education. Of these, thirteen contained "environmental

education" somewhere in the title, one "conservation education," and one "outdoor education." Two did not contain the obvious keywords.

From these investigations it seems that computer searches using a few keyword combinations will probably produce a high percentage of the relevant dissertations. Again, the primary problem would probably be getting too many citations. Some of the keyword pairs used in the DATRIX II search reported here should be avoided: "Educational, environment" produced 29 citations, none relevant to "environmental education." Keywords such as "Environmental, communications" will definitely produce too many citations, and most of them will be irrelevant.

Another classifying device used by University Microfilms International -- the subject headings -- is less useful to the environmental educator. None of the many subheadings under "Education" seem closely related to environmental education.

Master's Theses

The major source of master's theses is another department of University Microfilms International, which publishes a quarterly called "Masters Abstracts." They function in a

way very similar to Dissertation Abstracts International. For a fee of $20.00, a graduate student sends them his thesis along with a 150 word abstract. The abstract is then printed in Masters Abstracts under a subject category that he selects. The same computer searching and hard-copy or microfiche dissemination services are available as for dissertations.

The coverage by the master's thesis service of materials that could potentially be included is much poorer than that of the dissertations service. About 10,500 theses were on file in 1977 (compared to 450,000 dissertations in Dissertations Abstracts International), and about 2000 more are added each year.

A Datrix II title search to locate environmental education theses (see Appendix I for the list of keywords used) produced only seven citations. The abstracts revealed that only five of them were actually related to environmental education.

Officials at Masters Abstracts (personal communications) indicate that the cost to the student and poor knowledge of their program were the main reasons for its relatively poor utilization. They did not indicate that major efforts were being made to increase its usage.

A few master's theses find their way into the ERIC/SMEAC system. Of the sixty-one thesis abstracts eventually compiled during this project, at least four had been entered into the ERIC system. However, ERIC/SMEAC does not normally encourage the submission of master's theses. One overriding reason is that there is a possible lack of quality control, both in technical quality and in the content. ERIC seeks to preserve the overall quality of its collections and does not want to categorically open its doors to master's theses.

Research organizations for other disciplines have made collections of master's abstracts. For instance, the publication Journalism Abstracts prints abstracts of master's theses and doctoral dissertations done in graduate schools of journalism and communications. The editor believes that "the vast majority" of theses and dissertations done in graduate schools of journalism and communications schools are represented (Dr. Mark Popovich, editor of Journalism Abstracts, personal communication.) It contains many abstracts of work related to environmental communications. Unfortunately there is no quick way to locate such works in the publication except by reading all the titles. In a typical year (1976) there were 64 dissertations and 288

theses. Three of the theses were related to environmental communications.

From the above discussion it seems clear that there is poor access to master's work in environmental education compared to other forms in which environmental education research is reported. It is not surprising that this gap has been noted by environmental educators themselves. At the Rocky Mountain National Park Conference of the National Association for Environmental Education in 1977, a session was held to discuss the problem of access to research in environmental education. Master's level research was singled out as an area in which substantial progress could be made. Subsequent to this, the State University of New York College of Environmental Science and Forestry agreed to provide support to the master's thesis project. That project, and a follow-up attempt to gauge its usefulness, is the subject of this thesis.

CHAPTER III

Locating Master's Theses in Environmental Education

Once the choice had been made to try to improve access to theses in environmental education, an initial decision was the proper form in which to report the theses to users: by titles, abstracts, or by centrally-prepared summaries based on the complete thesis.

Titles alone would often not convey sufficient information to enable the reader to judge whether the contents of the full theses would be of interest to him. While titles for dissertations are usually written with some concern for the incorporation of appropriate keywords, since the authors are aware that future access to their research via the University Microfilms system is feasible primarily through descriptive titling, master's thesis' titles often appear to be uninfluenced by such concerns. Their titles tend to be more casually chosen -- as can be seen by examining the titles of the theses that were eventually collected as a result of this project. (These are in Appendix VI.)

Requesting full copies of the theses was an attractive option for several reasons. First, this would have meant

that all of the theses reported would have been gathered together at one central place, theoretically facilitating their eventual dissemination. Secondly, the contents of the theses could have been described by summaries written by the researcher, producing a greater uniformity of style than the author's own abstract. Finally, the accurate classification of the theses would have been made easier if the researcher could have had full copies.

Several practical objections causes the rejection of this possibility. Full copies of the theses might have proven difficult to obtain for permanent or long-term use. Usually, only a few are printed and distributed to the author, his graduate committee, and to the University Library.

The labor involved in reading and summarizing the theses would have been tremendous. There were no facilities at the State University of New York College of Environmental Science and Forestry (where the project was being done) to duplicate and disseminate full copies of the theses on a regular basis. To parallel the kinds of services offered by ERIC or University Microfilms would have required an investment far beyond the scope of the project.

It was decided to use copies of the author's own

abstract of the thesis. The abstract should provide sufficient information for the reader to judge whether the full thesis meets his needs and interests. The abstract would be readily obtainable, and of a convenient length for inclusion in a published collection.

The next question was how to go about obtaining these abstracts. The shortcomings of existing sources of master's theses were previously discussed. There seemed to be no "royal road" for obtaining such materials.

Several possibilities presented themselves. First, to write librarians of schools where environmental education master's work was likely to have been done, asking them to search for and forward abstracts of relevant theses; second, to write officials in charge of graduate records at individual schools, programs, or departments where environmental education graduate work had been done, requesting their help in obtaining abstracts; or third, to write faculty involved in graduate environmental education programs to cooperate in sending abstracts.

The first and second alternatives were rejected because they would have required tremendous cooperation from individuals with only a marginal interest in the project. Also, not being a direct part of the environmental education

community, they might have had some difficulty in discerning what kinds of materials were being sought. A variant on the second option would have been to request abstracts of all theses completed in a department where there was a major focus on environmental education. Then, the researcher could decide which to include in the compilation of abstracts as being relevant to environmental education. However, this would have entailed a great deal of unnecessary labor by the cooperating institutions, since--as we shall see--much master's level work in environmental education is done in departments and programs where environmental education is but one of many fields of study.

In the end, the primary means used to obtain master's abstracts was by letters and phone calls to faculty (generally department chairmen) known to be involved in environmental education.

The most important and difficult step in the entire project was to generate a list of institutions, programs, and departments -- and the individuals associated with them -- where master's level work in environmental education was being done. Here the fragmentalization of environmental education into various departments, its inter- and multidisciplinary nature, and the disparate definitions of

environmental education referred to earlier in Chapter I became of cardinal importance.

Simply put, there is no central directory of environmental education graduate programs in the United States. It was hoped that such a directory might have been produced as a spin-off to this project, but no such listing can be claimed to have been developed.

A number of methods were tried to find environmental education graduate programs:

Graduate catalogues were searched to try to find environmental education programs or concentrations of courses with environmental education content. This search did not prove fruitful, since many catalogues offer only sketchy descriptions of courses and programs, and the sheer number of catalogues and difficulty of hunting through them for specific programs made this extremely time-consuming.

A letter was sent to the Office of Environmental Education in the hope that a listing of graduate-level environmental education programs had been done by that Federal agency. Unfortunately there was no reply.

Faculty at the State University of New York College of Environmental Science and Forestry involved in environmental education were asked to suggest names of individuals

and programs in the field. These individuals were then asked for further suggestions. This group of contacts proved to be the best source of thesis abstracts.

Finally, the majority of names of faculty who were sent letters were taken from the Conservation Directory, 1976 edition, published by the National Wildlife Federation. This is a listing of colleges and universities with a wide range of programs in environmentally-related fields, from Soil Science to Range Management to Environmental Law. Of these, programs which offered graduate degrees, and which by their titles seemed to potentially involve environmental education (such as "Natural Resources Recreation," "Park Administration," or "Natural Resources Interpretation,") were selected for inclusion in the mailing list.

Appendix II contains the original list used in requesting these abstracts. (Personal contacts, who were also sent letters, are included in the list.)

In order to diversify the coverage beyond the Conservation Directory listing and personal contacts, it was decided to also contact graduate schools of communication and education. It was suspected that much environmental education work might be done in such programs that were not specifically called "environmental".

This mailing was essentially a "fishing expedition". The schools were chosen mainly for their size or because they were in universities known to have a strong environmental focus. As will be seen from the discussion of results in Chapter IV, the response from this particular group was poor.

Several sources of environmental education graduate programs became available or known to the researcher too late to be used in generating the mailing list:

Environmental Education in Action-II: Case Studies of Environmental Science Programs in Colleges and Universities Today (Schoenfeld and Disinger 1978a) is a compendium of descriptions of 45 environmental studies programs in the United States and Canada. Of these, at least twenty-one seemed to include graduate programs where environmental education is being done. Only nine of these 21 had been included in the mailing list.

A directory of university-level outdoor education programs (Bachert 1977) became available early in 1978. This lists 29 schools with master's or Ph.D. programs in outdoor education or environmental education (or concentrations in those fields.) Only eleven of these 29 had been on the mailing list.

A third listing of environmental education graduate programs is in Environmental Education: A Guide to Information Sources. (Stapp and Liston, 1975). This publication lists 19 graduate degree programs of environmental education in the United States. Fourteen of those had been included in the mailing list.

Finally, a mailing list of members of the National Association for Environmental Education was provided too late for use in the project. This organization played a role in the formulation of the project and the dissemination of the results, so members would have had more incentive than most to cooperate. This NAEE mailing list was eventually searched for individuals who indicated university affiliations, and the names saved for the later continuation of the thesis project.

Considerable thought was given to the wording of the letters which were finally sent out. Three letters were sent: one to faculty in environmental education programs; one to the graduate schools of education; and one to graduate schools of communication.

The letters had to be specific enough to inform the reader of the general nature of the materials being sought, in order to avoid burdening them with the unnecessary work

of sending irrelevant theses (or perhaps discouraging participation altogether), yet avoid the possibility of causing some theses to be withheld because of too-stringent restrictions.

It was decided not to include a definition of environmental education in the letters for several reasons, principally because any definition might have limited the scope of submissions. It was felt that it would be better for the researcher to edit out irrelevant submissions than to risk a kind of pre-editing by the recipients of the letters, over which the researcher would have no control.

In retrospect, the letters sent to the graduate schools of education and communications might have been improved by greater specificity, since in many cases the individuals who received the letters might not have been familiar with the concept of environmental education. Their participation might have been facilitated by a more detailed description of the kinds of materials that were being sought. However, there were no replies from the schools which had been written which asked for clarification of what kinds of master's theses were being sought. The usual reply was that few of their master's degree students wrote theses.

Along with the letters were sent thesis reporting

forms. These were designed to be photoreduced for direct printing in the final compilation of thesis abstracts. Follow-up phone calls were made to schools with known active environmental education departments, along with sending the letters.

The letters sent contained a time limit for theses: they asked only for theses completed within the past year. This was done to make the final compilation current, and to reduce the amount of work necessary for both the researcher and the recipients of the letters. However, many of the abstracts returned were of theses completed before the time limit. Some of the theses had been completed as far back as 1970. It was decided not to eliminate the older theses from the compilation of abstracts, because it turned out that most of the abstracts submitted came from theses completed before the intended time frame.

Whether the time limit in the letters discouraged the submission of older theses from some schools is difficult to say. However, at least nine of the fourteen schools which returned thesis abstracts apparently ignored the time limit completely. A total of 88.5% of the abstracts used came from these nine schools. No schools wrote back to say that they had abstracts of relevant theses which they were not

sending because the theses had been completed before the desired time period.

Because the success of the project ultimately depended upon the cooperation of the individuals who received the letters, some analysis of their barriers and incentives toward full participation is necessary. Most of the individuals written, whether from the Conservation Directory, the personal contacts, or the graduate schools of environmental education and communications, chaired large departments in which environmental education was but one of several concerns. These people would in many cases not be personally familiar with the work of graduate students involved in environmental education, and would have to refer the letter to the appropriate faculty. In many cases the thesis reporting forms were sent back by individuals other than the one to whom they were sent, indicating that forwarding was done within the institution to get the forms to the proper person.

In any case, the individual who was finally responsible would have to find the thesis abstracts. In some of the smaller programs a single faculty member might be personally familiar with all environmental education master's theses: if he or she had been the advisor for them,

all of them might be on file in his or her office. In the larger programs, finding the theses might have involved detailed searching through departmental records.

Next, the thesis reporting form would have to be filled out and the abstract typed in. (The work of the cooperating individuals would have been eased if photocopied submissions of the abstracts had been requested. These would then have had to be retyped on the reporting form at the College of Environmental Science and Forestry. Six abstracts were actually submitted in photocopy form, not typed on the reporting form. These were then retyped for inclusion in the compilation of abstracts.) In the case of the larger programs, such as Ohio State, the typing of thesis abstracts required considerable labor.

The only item on the thesis reporting form which seemed to cause difficulties was the address of the thesis author. This was not included in 17 of the 61 reporting forms that were used in the final compilation.

Active participation in the study therefore required a considerable effort of forwarding, searching, and typing. There were levels of cooperation which involved much less effort. In some cases, (including the University of Michigan), the letters were forwarded to the authors of the

theses, who then submitted their abstracts on the reporting form directly to the researcher. A few schools sent lists of graduate students who had completed the environmental education program, the titles of their theses, and an address. Letters were then sent by the researcher to these individuals. Few of the students written responded to the letter.

The incentives for participation in the study were mostly indirect. The letters tried to encourage participation by referring to the importance of an information-sharing network to the environmental education community. In more practical terms, all of the schools that participated were offered a copy of the final compilation. (These were sent out in May 1978.) A list of the institutions that contributed abstracts is contained in Appendix VII. For the programs, there would be the incentive that the work of their students might receive some recognition and dissemination. The students themselves might have the strongest incentives for seeing that their work be published -- if only the abstracts -- but in most cases they were not the ones directly contacted to be responsible for reporting the thesis.

The degree to which these incentives and barriers

influenced participation in the research project cannot be completely known. The next chapter will discuss the results of the project to gather theses, and may clarify this question.

CHAPTER IV

Project Results

From the mailings, a total of sixty-nine thesis reporting forms were returned, including abstracts. Of these sixty-nine, eight were not included in the final compilation of abstracts, since, judging from the abstracts, they were ecological or environmental studies with no manifest educational or communicational content.

While programs whose names were obtained through personal contacts resulted in about the same number of returned thesis abstracts as those found through the Conservation Directory, personal contacts were much more efficient: only six programs had been found through personal contacts, while letters were sent to 44 programs from the Conservation Directory listing.

A number of problems arose from the Conservation Directory listing. In many cases, the individual to whom the letter was sent was no longer associated with the institution, and the letters were returned unopened. In retrospect, it might have been more effective to address the letter to the

Table 1: RESULTS OF REQUEST FOR THESIS ABSTRACTS

	Number of Departments Contacted	Returned Abstracts	Number of Abstracts	% of Total	No Abstracts Available
Personal Contacts	6	4	34	49.3	-
Conservation Directory	44	10	35	50.7	8
Schools of Education	14	0	0	0	10
Schools of Communication	14	0	0	0	8

"Department Chairman" except when there was some more current knowledge of the name of the responsible individual than that provided by the Directory.

The mailing to the graduate schools of communications and education produced no theses. Most of the schools of education responded that either no thesis was required, or that a thesis option was rarely exercised.

It is clear that not all of the relevant thesis abstracts were obtained from some of the schools which were contacted. The University of Michigan has a major graduate environmental education program, but only one thesis abstract was obtained from a University of Michigan graduate. As mentioned previously, the University forwarded the thesis reporting forms to their graduated students. Only two thesis abstracts were obtained from graduates of

the University of Wisconsin -- Madison, both indirectly through Journalism Abstracts. The University had provided a list of the graduates of their environmental education and communications programs. These graduates were written directly, but the response from them was poor.

It is hard to assess how many more theses might have been obtained if the additional sources mentioned in Chapter III had been tapped. The nature of the abstracts received showed a bias introduced by the heavy reliance on the Conservation Directory listing. The schools in it tend to be focussed more on natural resources, forestry, and environmental education in park and semi-wild settings. It included few of the newer "Environmental Studies" programs, and programs oriented toward urban and technological problems.

The result of the project was the publication of Recent Master's Thesis Work in Environmental Education and Communications, a compilation of 61 thesis abstracts. (See Appendix VI.) These abstracts were taken directly from the reporting forms. The abstracts were classified into six categories to make the compilation more convenient for readers to use. These were (1) Site Analysis (descriptions and development plans for areas to be used for environmental

education and practicum-type studies; (2) Parks - Users and Interpreters - (studies done in visiting parks, usually focussing on user characteristics and interpretive techniques); (3) Media Communications (studies of the treatment of the environment by the mass media); (4) Pupil-Centered Studies (research with pupils as the subjects, usually dealing with learner characteristics or the relative effectiveness of various pedagogical techniques); (5) Teacher - Centered Studies (research with teachers, educators, or interpreters as the subjects); and (6) Resources, Administration and Others (a catch-all category which included studies on the philosophy and goals of environmental education, administration of environmental education programs, and some experimental studies which do not fit the other categories).

Three hundred copies of the compilation were printed. They were distributed by mail to the participating schools, and to individuals who had expressed interest in them during the course of the project. The primary distribution was at the annual conference of the National Association for Environmental Education, held in Chicago April 30 - May 2, 1978. A paper describing the project was also delivered at the conference.

The project to disseminate master's theses was continued the next year, with the publication in April 1979 of vol. II of Recent Master's Thesis Work in Environmental Education and Communications. Both the 1978 and 1979 compilations have been made available through ERIC and through the National Association for Environmental Education.

CHAPTER V

Follow-up Surveys

Part of the thesis project was an attempt to follow-up on the distribution of the compilation of thesis abstracts in order to assess its usefulness to readers. Coupled with this was an attempt to find out how much use environmental educators actually make of the various sources of research studies. Finally, in order to probe more deeply into the dissemination of master's theses, the authors of theses used in the compilation of abstracts were contacted. Three survey questionnaires were developed and distributed.

The first survey (Appendix III) was sent to the 23 individuals who attended the National Association for Environmental Education workshop on Dissemination of Environmental Education Research, May 1, 1978, and to the 40 who signed a list at the NAEE conference requesting copies of the compilation of thesis abstracts. A total of 63 survey questionnaires were mailed out, and 48 returned, -- a 76.2% response rate.

A second survey questionnaire was sent to the head librarians of the fourteen schools which had sent thesis abstracts to be included in the compilation (Appendix IV).

These questionnaires were primarily to determine if full copies of the thesis could be borrowed by interested persons. There were ten replies, for a 71.4% response rate.

A third questionnaire (Appendix V) was sent to the 44 authors of theses in the compilation whose addresses were included in the thesis reporting form. From this mailing there were 33 responses, a 75% rate.

NAEE Questionnaire Results

The individuals who were sent the NAEE questionnaire can be characterized as a select group of environmental educators who, by their attendance at the workshop on research or by the interest in the thesis abstracts, had demonstrated considerable interest in academic research in their field.

Relative to the attendance at the conference as a whole the sample seemed to contain a disproportionate number of college teachers. Of the 48 returned questionnaires 24 persons (50%) identified themselves as college teachers. There were only two primary or secondary school teachers (4.2%), six college students (12.5%), six administrators (12.5%), and ten "others" (20.8%): of the "others" the role most often specified were consultant (5 respon-

dents--10.4%), and Curriculum Developer (3 respondents--6.25%.)

Much of the data from the questionnaire was analyzed by dividing respondents into two groups, whose responses were then compared. These two groups were college teachers and those who were not college teachers. There were several reasons for dividing the respondents into these two groups. In discussing the utilization of research information sources, it should be noted that almost all of them are primarily useful to one who has access to a university or other research library. Sources such as Dissertation Abstracts International are usually found only in such large libraries. The exceptions are certain computer searches which can be ordered by telephone and the Journal of Environmental Education, which of course can be obtained by subscription. It was felt that, as a whole, the college teachers would have better access to research sources and that it would be instructive to see how usage of these sources of research differed between the college teachers and non-college teachers. College teachers had been considered a primary potential audience for the compilation of abstracts. It was felt that they might tend to be more concerned with overall aspects of environmental education as

a field, while the respondents in the other categories might seek research findings to address specific practical problems.

Four questions were designed primarily to gauge the degree of interest in and usefulness of the compilation of abstracts. When asked to rate the usefulness of it, no respondent said it was not useful, while 32 (69.6%) found it somewhat useful, and 14 (30.4%) found it very useful. Two did not answer. There was essentially no difference between the college teachers and non-college teachers on this question.

Asked how many full copies of the theses they would like to read of those abstracted in the compilation, fourteen said none, eighteen indicated they would like to, some without specifying a number, and fourteen indicated a specific number. Of these, the lowest number was one, the highest was twenty, and the median was seven.

Respondents were asked to rate their interest in master's theses in environmental education and communications on a one to five scale, with one representing low interest and five high interest. The arithmetic mean of all respondents was 3.83, with virtually no difference between the college teachers and the non-college teachers.

The last question concerning interest in master's theses was designed to produce a more tangible response. Respondents were asked if they would be willing to purchase a similar compilation if the NAEE began to issue one on an annual basis. Forty respondents (90.9%) replied yes (with two adding that the price would have to be reasonable) and four (9.1%) said no. (The question was hypothetical only: it was also stated that the answer did not obligate the respondent.)

Perceived access to master's theses was another question. Twenty-five (58.1%) replied that they could get full copies of theses they wanted, while four (9.3%) replied "no," and fourteen (32.6%) responded "Don't Know." Many mentioned Inter-Library Loans as the source they would use to get theses. College teachers were much more likely to reply that they could get the theses. Sixteen of them replied that they could, while eight said they didn't know. The corresponding figures for the non-college teachers were nine "yes," four "no," and eleven, "don't know". This difference between the two groups is significant at the .05 confidence level, as given by a 2X3 Chi-Square.

A major part of the survey was an attempt to see how often respondents utilized various potential sources of

environmental education research. The answers are summarized in the graphs on Table 2.

The most frequently used sources were the Journal of Environmental Education and ERIC. The Institute for Scientific Information was the least used of all sources, with Masters Abstracts second from the bottom. (Some confusion may have been caused by the use of the name "Institute for Scientific Information" -- some might know of this service only by the titles of its individual functions such as the Social Science Citation Index.)

Chi-square tests were done for each of the research sources to compare the use by college teachers and non-college teachers. Results are shown in Table 3.

As can be seen from the table, college teachers were significantly more likely to use University Microfilms, Dissertation Abstracts, Journalism Abstracts, and the Journal of Environmental Education, at the .05 confidence level or better. None of the other Chi-squares produced significant differences.

Finally, the respondents were asked to rate their access to forms of environmental education research on a 1-5 scale, with one being poor and five excellent. Table 4 presents the arithmetic means of the responses for college

Table 2: UTILIZATION OF RESEARCH INFORMATION SERVICES

Table 2: UTILIZATION OF RESEARCH INFORMATION SERVICES, (continued)

Table 2: UTILIZATION OF RESEARCH INFORMATION SERVICES
(continued)

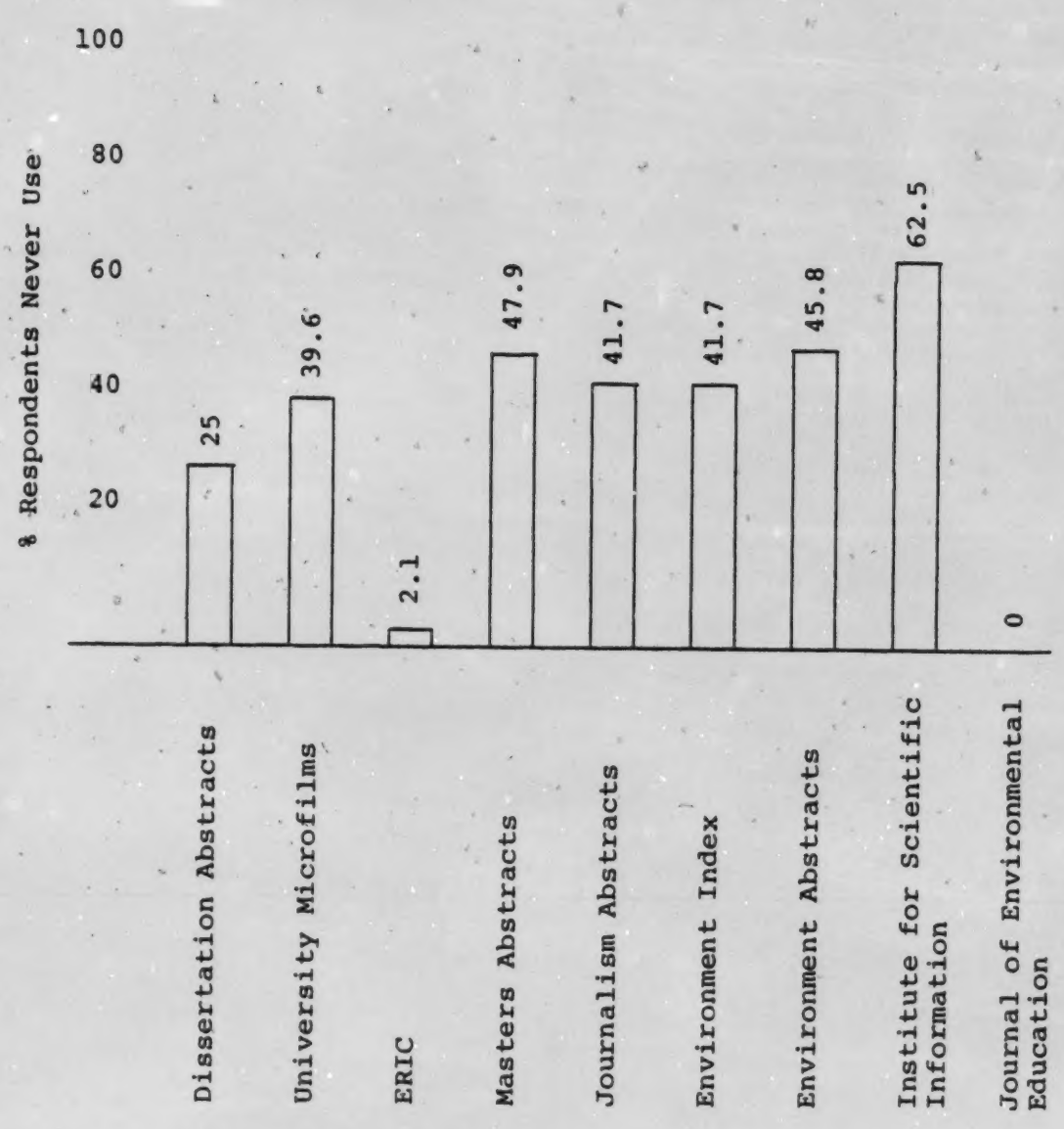

Table 3: CHI-SQUARES FOR UTILIZATION OF RESEARCH INFORMATION SOURCES

	0	1-2	3+
College Teachers	2	11	11
Non-College Teachers	10	9	5

Dissertation Abstracts
X^2=7.78
Significant at .01

	0	1-2	3+
College Teachers	5	4	15
Non-College Teachers	13	7	4

University Microfilms
X^2=10.742
Significant at .001

	0	1-2	3+
College Teachers	1	7	16
Non-College Teachers	0	7	17

ERIC
X^2=1.030

	0	1-2	3+
College Teachers	9	11	3
Non-College Teachers	14	5	5

Master's Abstracts
X^2=3.837

	0	1-2	3+
College Teachers	8	10	6
Non-College Teachers	12	12	0

Journalism Abstracts
X^2=6.982
Significant at .05

	0	1-2	3+
College Teachers	9	8	7
Non-College Teachers	11	4	8

Environment Index
X^2=1.600

	0	1-2	3+
College Teachers	8	8	8
Non-College Teachers	14	6	4

Environment Abstracts
X^2=3.255

	0	1-2	3+
College Teachers	14	9	0
Non-College Teachers	16	5	2

Institute for Scientific Information
X^2=3.276

	0	1-2	3+
College Teachers	0	1	23
Non-College Teachers	0	8	16

Journal of Environmental Education
X^2=7.52.
Significant at .05

Table 4: PERCEIVED ACCESS TO ENVIRONMENTAL EDUCATION RESEARCH

	Arithmetic Means	
	College Teachers	Non-College Teachers
Doctoral Dissertations	4.15	3.25
Master's Theses	2.80	2.25
Student Papers	1.67	1.18
Published Journal Articles	4.73	4.33

teachers and non-college teachers. These results indicate that perceived access to the various forms of research is similar to the conclusions reached in Chapter II of this thesis: access to journal articles is considered the best, followed by doctoral dissertations. Access to master's theses and to non-thesis student research was considered much poorer.

Library Survey

There were two purposes of the questionnaire sent to head librarians, and only two questions asked. First, it was asked if full copies of theses completed at their schools (the ones which were represented in the compilation of abstracts) could be borrowed through inter-library loans. All ten responding librarians out of the fourteen queried answered that it would be possible to obtain theses. The

second question was whether the libraries would be interested in buying a copy of a similar compilation of abstracts if the project were continued. Eight of the ten replied affirmatively.

Thesis Author's Survey

A questionnaire was sent to the former graduate students who had written the theses abstracted in the compilation. Forty-four questionnaires were mailed out, to the authors whose thesis reporting form included a mailing address. Thirty-three questionnaires were returned completed. The response rate of 75% was considered good because many of the addresses given were probably obsolete. The authors were contacted because it was felt that they might know what dissemination their thesis had received, especially informal kinds of circulation.

The first four questions were intended to reveal any kind of dissemination, formal or informal. Eight of the thirty-three authors (24.2%) responded that there had been some publication of their thesis. Of these, four stated that it had been published in ERIC. While this is not the kind of "publication" meant in the question, it does indicate a high degree of availability. Two theses had actually been published as books, and in two other cases

the author indicated that substantial segments of their theses had been included in published plans or reports.

None of the theses had been entered into Masters Abstracts, according to the responses. While many respondents answered "Don't Know", it seems fair to say that none had been included in Masters Abstracts, since there is a fee required of the author, which they probably would have been aware of paying; and none of the theses in the compilation turned up in the computer search of master's theses in the University Microfilms system.

There were two catch-all questions which tried to elicit informal kinds of dissemination, such as usage of the theses by fellow graduate students, or spin-offs such as journal articles or teacher's aids. Fourteen respondents indicated some dissemination outside of their graduate committee. These included such things as the use of the author's research by other students, and copies of the thesis sent to government agencies that had cooperated in the study. In all cases the distribution was on a very small scale. Nineteen respondents said that some spin-off product - usually lesson plans, slide shows, or planning studies related to the thesis - were results of the thesis project. Three published journal articles resulted from

the theses.

Because of the overlap in responses, there were still eight individuals (24.2%) who indicated that there had been no utilization or dissemination of their thesis or any related products or research since their thesis had been produced.

From this survey it appears that most authors are not aware of any formal dissemination of their thesis research. From the previous analysis in Chapter II, it seems probable that they are correct.

CHAPTER VI

Conclusions and Recommendations

From the investigations described in this thesis the following conclusions can be made:

--Master's theses in environmental education are more difficult to obtain than books, doctoral dissertations, and journal articles in the field; and environmental educators perceive that this is so.

--There is moderate to high interest in such theses among environmental educators.

--There are a few sources of research information utilized by a high proportion of the sample group of environmental educators, but none of these information sources cover master's thesis material with any degree of thoroughness.

--Most master's thesis in environmental education are not disseminated through formal channels. Rather, if they are used by others at all, they are obtained through small-scale, informal means of distribution.

However, this thesis has been primarily a description of an action-oriented project that was meant to produce a tangible, useful product that would alleviate some of these

problems of access to master's theses. That product was the publication Recent Master's Thesis Work in Environmental Education and Communications.

The following recommendations will be directly concerned with ways to continue the improved access to master's theses. There are a number of options available, and different ways in which these options can be utilized.

The first option to be considered was suggested from the audience at the NAEE session -- to encourage greater use of Masters Abstracts, perhaps even offering a subsidy for students wishing to include their thesis in that publication, through the NAEE or other sources.

This proposal has a number of attractive features. All of the theses would be available in one central place. Abstracts would be printed in Masters Abstracts, and full copies could be easily obtained. Theses could be located through the methods described for the University Microfilms system in Chapter II. A further service possible is that all individuals wishing to be notified of all theses entered into the system having titles with certain keywords (like "environmental education") could arrange for this through University Microfilms.

The primary drawback is that, judging from the NAEE

survey, environmental educators are not presently in the habit of using Masters Abstracts. They would have to be educated and alerted to the possibilities of using it as an information source. Furthermore, there is no convenient subject heading to use to search for environmental education research work in the University Microfilms system. If the theses do not have "environmental education" or similar keywords in their titles, they would be difficult to find. To obtain full copies of the theses would cost $8.25 for a microfiche copy or $16.50 for a xerox copy -- money that researchers might be reluctant to spend on the basis of an abstract only. The contributing author must spend a minimum of $20.00 just to put his thesis into the system, and this would surely be a disincentive for many. Subsidization by the NAEE or other organization would be an expensive undertaking, and the question of what to subsidize would revive the old what-is-environmental-education question. Finally, there would remain the problem of contacting the thesis authors and encouraging them to use Masters Abstracts. This would have most of the same problems of this thesis project; finding the departments, writing the students, and so forth. Again, there would be a considerable task of education, since, as the survey showed, many

students do not know of the existence of Masters Abstracts.

A second possibility - also mentioned at the NAEE session - was for ERIC/SMEAC to actively encourage submission of master's theses and the entry of them into the ERIC system. This option has many obvious advantages. First, ERIC is very widely used among environmental educators. They are already accustomed to ERIC and relatively familiar with its use. As discussed in Chapter II, the means for locating environmental education materials through descriptors seems efficient and effective. Relevant theses would surely be given an "environmental education" descriptor. Abstracts would be readily available through Resources in Education, and microfiche copies could also be freely obtained at many locations. The service would be without cost to either the thesis author or the researcher trying to obtain theses.

The major drawback is that all of this would require a major commitment of time and effort by ERIC/SMEAC. Each thesis would have to be read, abstracted and catalogued. If all theses were not to be included, difficult judgments about the relative quality of these would be necessary. Theses that were not chosen for inclusions would again essentially be lost.

The third option would be to continue to compile abstracts of master's theses as a separate project, and to place the compilation of abstracts in the ERIC system. The primary advantage of this option, compared with the others, is that (potentially) all environmental education theses would be gathered together in a single publication. This is much more convenient for potential users than searching through the many volumes of Resources in Education or Masters Abstracts. Full copies of the theses could probably be obtained in most cases through inter-library loans. The compilation of abstracts itself would be readily obtainable through the various ERIC outlets.

The major difficulty with carrying out this last option successfully remains the solicitation of thesis abstracts from the many diverse departments and programs concerned with graduate environmental education. At this writing (Jan. 1980) the project to gather and disseminate thesis abstracts is in its third year. The increasing familiarity in the environmental education community with the project appears to be easing the solicitation problem. More use of the additional listings of graduate programs mentioned in Chap. III would also improve the overall coverage of graduate environmental education programs.

APPENDIX I

Keywords for University Microfilms Computer Searches

Doctoral Dissertations Search:

Conservation, Schools, #Attainment, #Volume, #Mass, #Number
Conservation, School, #Attainment, #Volume, #Mass, #Number
Conservation, Communications, #Attainment, #Volume, #Mass, #Number
Conservation, Communication, #Attainment, #Volume, #Mass, #Number
Environment, Education
Environment, Educational
Environmental, Education
Environmental, Educational
Natural, History, Education
Parks, Interpret
Parks, Interpretation
Parks, Interpretations
Education, Camp
Education, Camps
Education, Camping
Education, Outdoors
Education, Outdoor
Environmental, School, Learning
Environmental, School, Communication
Environmental, School, Communications
Environmental, School, Media
Environmental, Schools, Learning
Environmental, Schools, Communication
Environmental, Schools, Communications
Environmental, Schools, Media
Natural, Resource, Education
Natural, Resources, Education
Natural, Resource, Educational
Natural, Resources, Educational
Natural, History, Education
Natural, History, Educational
School, Camp
School, Camping
School, Outdoor
School, Outdoors

Schools, Camps
Schools, Camping
Schools, Outdoor
Schools, Outdoors
Schools, Camp

(# sign before a word means titles containing that word will not be reported.)

Master's Theses Search:

Conservation, Communication
Conservation, Communications
Education, Environment
Education, Environmental
Education, Conservation
Education, Outdoor
Education, Ecological
Education, Ecology
Educational, Environment
Educational, Environmental
Educational, Conservation
Educational, Outdoor
Educational, Ecological
Educational, Ecology
Energy, Education
Energy, Educational
Environment, Interpret
Environments, Interpret
Environmental, Interpret
Environment, Interpretation
Environments, Interpretation
Environmental, Interpretation
Environments, Interpretations
Environmental, Interpretations
Environment, Interpretations
Environment, Communication
Environments, Communication
Environmental, Communication
Environment, Communications
Environments, Communications
Environmental, Communications
Environment, Media
Environmental, Media
Information, Environment

Information, Environments
Information, Environmental
Interpretations, Park
Interpret, Parks
Interpreted, Parks
Interpretation, Parks
Interpretations, Parks

APPENDIX II

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Burton Blatt, Dean
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Syracuse, New York 13210

APPENDIX III

Graduate Research Questionnaire

1. I am a (please check one):

_____College Teacher
_____Primary or Secondary School Teacher
_____College Student
_____Naturalist or Interpreter
_____Administrator
_____Other (please specify):_____

2. Did you find the compilation of abstracts, Recent Master's Thesis Work in Environmental Education and Communications, to be useful?

_____Not useful _____Somewhat useful _____Very useful

3. How will you use this compilation of abstracts?_____

_____

4. Would you want to read any full copies of the theses abstracted in the compilation?

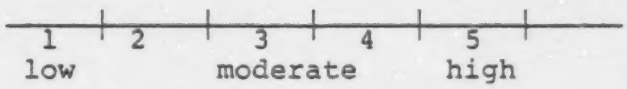
_____Yes (please specify how many):_____
_____No

5. Can you get the full theses you want to read from a library near to you?

_____Yes
_____No
_____Don't Know

6. If the NAEE continues this project on a self-sustaining basis, issuing an annual compilation of abstracts, would you want to purchase it? (Your answer does not obligate you.)

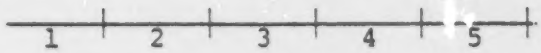
7. On a one to five scale, (one=low, five=high) rate your interest in master's theses in environmental education/communications.



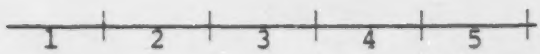
8. How often do you consult the following sources for environmental education information in a year?

Never	Once or Twice	Three or More Times	
_____	_____	_____	Dissertation Abstracts
_____	_____	_____	University Microfilms
_____	_____	_____	ERIC/SMEAC
_____	_____	_____	Master's Abstracts
_____	_____	_____	Journalism Abstracts
_____	_____	_____	Environment Index
_____	_____	_____	Environment Abstracts
_____	_____	_____	Education Index
_____	_____	_____	Institute for Scientific Information
_____	_____	_____	Journal of Environmental Education

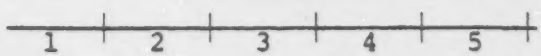
9. How would you rate your access to the following kinds of environmental education research work? (1=poor, 5=excellent)



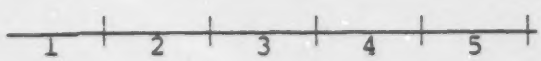
Doctoral Dissertations



Master's Theses



Student Research Papers (non-thesis)



Published Journal Articles

APPENDIX IV

Questionnaire to Librarians

STATE UNIVERSITY OF NEW YORK

COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY

[illegible]CUSE CAMPUS
SYRACUSE, NEW YORK 13210

SYRACUSE CAMPUS
SYRACUSE, N. Y. 13210
Schools of:
- Biology, Chemistry, & Ecology
- Continuing Education
- Environmental and Resource Engineering
- Environmental and Resource Management
- Landscape Architecture

Applied Forestry Research Institute
Empire State Paper Research Institute
Institute of Environmental Program Affairs
State University Polymer Research Center
U.S. Forest Service Cooperative Research Unit

CRANBERRY LAKE CAMPUS
CRANBERRY LAKE, N. Y. 12927
Charles Lathrop Pack Demonstration Forest
Cranberry Lake Biological Station

NEWCOMB CAMPUS
NEWCOMB, N. Y. 12852
Archer & Anna Huntington Wildlife Forest
Adirondack Ecological Center

TULLY CAMPUS
TULLY, N. Y. 13159
Heiberg Memorial Forest
Genetic Field Station

WANAKENA CAMPUS
WANAKENA, N. Y. 13695
Forest Technician Program

WARRENSBURG CAMPUS
WARRENSBURG, N. Y. 12885
Charles Lathrop Pack Demonstration Forest
Summer Field Program

May 26, 1978

Dear

Enclosed is Recent Master's Thesis Work in Environmental Education and Communications, a compilation of abstracts of master's theses in environmental education and communications. I hope you will find it informative and possibly of use in your library system.

As part of a project to improve the dissemination of research information in environmental education/communications, I would appreciate your reply to the questions below. Please return them in the enclosed stamped envelope.

- -

1. Do you allow master's theses kept at your libraries to be borrowed outside your library system?

___ Yes, through Inter-Library loans.

___ Yes, through other channels. (Please specify):

_____

___ No

2. If the National Association for Environmental Education were to continue this project and to publish an annual compilation of environmental education master's abstracts on a self-sustaining basis, would your library be likely to purchase copies? (Your answer does not obligate you in any way).

___ Yes ___ No

Yours truly,

David L. Hanselman
Associate Professor
Env. Education/Communications

Chris Yuen
Research Associate

APPENDIX V

Questionnaire to Thesis Authors

QUESTIONNAIRE

1. Has your master's thesis been published anywhere (besides the publication of the abstract in Recent Master's Theses)? Yes_____No_____
If so, where?

2. Has an abstract of your master's thesis been published in Masters Abstracts? Yes_____No_____

3. Has there been, to your knowledge, any dissemination of your thesis outside of your graduate committee? (Excluding Recent Master's Theses.) Yes_____No_____
If so, please explain how:

4. Has your master's thesis been the basis for any lesson plans, park plans, trail guides, textbooks, or other materials, whether prepared by you or by someone else? Yes_____No_____
If so, please specify:

5. Are you presently employed in work related to environmental education, communication, or interpretation? Yes_____No_____

6. Are you seeking work in these fields? Yes_____ No_____

7. Please describe your present employment:

APPENDIX VI

Recent Master's Thesis Work in
Environmental Education and
Communications

THIS APPENDIX REMOVED DUE TO COPYRIGHT RESTRICTIONS.

APPENDIX VII

Institutions Submitting Thesis Abstracts

Ball State University
Central Washington University
Clemson University
Ohio State University
Purdue University
Slippery Rock State College
State University of New York College of Environmental Science and Forestry
Texas A&M University
University of Arizona
University of Idaho
University of Kentucky
University of Michigan
University of Missouri
University of Wisconsin

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Wigston, David L. "Problems of Subject Integration in Environmental Science," in David Hughes - Evans, ed., Environmental Education: Key Issues of the Future, Pergamon Press, Oxford, (1977).

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National Science Foundation Graduate Fellowship, 1978-79.

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"China Journey", (3-part series), The Orchid Isle, August 1977.

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